Case 11221

Primary duodenal diffuse large B-cell non-Hodgkin’s Lymphoma (DLBCL): CT findings
Published on 29.08.2013

DOI: 10.1594/EURORAD/CASE.11221
ISSN: 1563-4086
Section: Abdominal imaging
Area of Interest: Abdomen Gastrointestinal tract
Procedure: Diagnostic procedure
Procedure: Endoscopy
Imaging Technique: CT
Imaging Technique: Image manipulation / Reconstruction
Special Focus: Haematologic diseases Case Type:
Clinical Cases
Authors: Giuseppe Aquaro
Patient: 49 years, female

Clinical History:

A 49-year-old man presented to us with a two-month history of weakness and epigastric pain, colicky in nature. Physical examination disclosed a poorly nourished man; there was no superficial lymphadenopathy, abdomen was flat and soft. Routine haematology was also normal.

Imaging Findings:

Abdominal ultrasound revealed no focal lesions of the liver and spleen. Upper gastrointestinal (GI) endoscopy showed normal mucosa up to the first part of the duodenum and the presence of a prominent lesion with a flat ulceration at the medial wall of the 2nd part of the duodenum, in the region of the ampulla of Vater; a biopsy was performed. Immunohistochemical study showed that the tumour cells were reactive for CD20 and bcl-6 but negative for CD10 and bcl-2.

A MDCT total body was requested after oral and IV contrast material bolus administration. CT scan confirmed the presence of a lesion at the medial wall of the 2nd part of the duodenum and a circumferential wall thickening of about 1.6cm of the third part of the duodenum; also some para-aortic lymph nodes of 1.4cm were present. No findings were seen in the other parts of the body.

Discussion:

Extranodal lymphomas occur anywhere outside the lymph node region [1]: 50-60% of all primary GI lymphomas are non-Hodgkin’s Lymphoma [NHL] [2], so representing the most common extranodal manifestation. Many of these tumours are of the B-cell type [1]. Dawson cited 5 criteria for the diagnosis of a primary GI lymphoma: 1 – no palpable superficial lymph node; 2 – normal chest radiographic findings; 3 – normal white blood cell amount; 4 – at laparotomy, the alimentary lesion is predominantly involved with lymph node involvement confined to the drainage area of the GI segment; 5 – no involvement of the liver and spleen [1-4].

The incidence of primary GI-NHL is of one in 100,000 individuals per year: in duodenal lymphoma there is a
male:female ratio of 2:1 and the peak incidence is in the 5th decade of life [1-5-6].
The duodenum is the most infrequent site of these lesions [5, 6]: primary duodenal NHL in an uncommon primary
tumour of the GI tract [5-7] and lymphomatous involvement of the ampulla of Vater is even rarer [8, 9]. Many risk
factors have been described as HIV and Helicobacter Pylori infections, coeliac disease, steatorrhoea, Hashimoto’s
thyroiditis, Sjögren’s syndrome [1-5], inflammatory bowel disease and immunosuppression after solid organ
transplantation [1].
Symptoms are nonspecific: epigastric pain, weight loss, vomiting, bleeding, anaemia, peptic ulcer symptoms or
jaundice that may be seen in lesions involving the periampullary region [2-5].
Staging of primary GI-NHL is important for prognosis, planning and monitoring of the response to therapy [4]. CT is
the primary method used in staging NHL: bowel distension with contrast material is fundamental in the evaluation of
wall thickness [3].
Lymphomatous GI involvement occurs in the following forms: nodular, polypoid, infiltrative (focal or diffuse
thickening of the GI segment), aneurysmal, ulcerative and mixed. Diffuse infiltration may destruct the muscolaris
propria and autonomic plexus with an aneurysmal appearance of the GI segment in which wall involvement is
circumferential, while in the ulcerative form it is asymmetric. Lesions are usually homogeneous, can be hypo- or
isoattenuating, compared with the normal bowel, and enhance less than does the normal bowel after IV contrast
material [1-4].
Surgery is the treatment of duodenal NHL [2-7], followed by post-operative chemotherapy as CHOP
[cyclophosphamide, doxorubicine, vincristine and prednisone [5, 7, 10, 11]. Compared with surgery alone, some
authors believe that post-operation chemotherapy or chemoradiotherapy can improve patients’ event-free survival
[12].
Differential Diagnosis List: Primary duodenal diffuse large B-cell non-Hodgkin’s Lymphoma, Metastasis;
melanoma, Renal cell carcinoma, Adenocarcinoma, Enteritis, Leiomyoma, Leiomyosarcoma, Tuberculosis,
Inflammatory small bowel disease

Final Diagnosis: Primary duodenal diffuse large B-cell non-Hodgkin’s Lymphoma

References:
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Description: Upper GI endoscopy shows the presence of an ulcerative lesion at the medial wall of the 2nd part of the duodenum. Origin: G. Aquaro, Department of Radiology, Hospital “Fallacara” – Triggiano, Bari (BA) – Italy
Figure 2

a

Description: Axial CT scan shows the presence of a prominent lesion at the medial wall of the 2nd part of the duodenum. Origin: G.Aquaro, Department of Radiology, Hospital “Fallacara” – Triggiano, Bari (BA) – Italy

b

Description: A magnified axial CT image with more evidence of the lesion of the 2nd part of the duodenum Origin: G.Aquaro, Department of Radiology, Hospital “Fallacara” – Triggiano, Bari (BA) – Italy
Description: Axial CT scan reveals circumferential wall thickening of the third part of the duodenum.
Origin: G.Aquaro, Department of Radiology, Hospital “Fallacara” – Triggiano, Bari (BA) – Italy, Italy